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I

**NOTES ON BIRDS OF SINALOA AND NAYARIT,
MEXICO, IN THE FALL OF 1925**

BY

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The specimens forming the basis of this report were secured by the writer in Sinaloa and Nayarit (= Tepic), Mexico, during the months of September and October, 1925. Field work was carried on at three collecting stations, and the time was so apportioned that September 18 to 28, inclusive, was spent at Labrados, Sinaloa; October 2 to 19, inclusive, and October 29, about San Blas, Nayarit; and October 21 to 26, inclusive, on Maria Madre, Tres Marias Islands.

Both Labrados and San Blas are situated in the southern extension of the alluvial plain that stretches along the north-western coast of Mexico between the Sierra Madre Occidental and the sea. At many points this plain is cut transversely by the rivers which formed it, and, at its seaward margin, river silt and sea sand have united to form long, narrow islands, behind which the waters of the rivers find their tortuous way to the ocean. A veritable maze of decussate waterways,—fresh, brackish, and salt,—in extent dependent upon season and tide, form about the river mouths, and the inter-relationships of the various “esteros” are almost impossible to determine.

In the vicinity of Labrados, spurs of the Sierra Madre Occidental encroach upon the coastal plain so that but a six-mile

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strip of level land lies between them and the broad estero cutting Palmito de la Virgen from the mainland. At San Blas, volcanic masses, attaining no great elevation, come down to the sea; and off shore, other such masses form small, rocky islets.

The Mexican "tierra caliente", within which the three collecting stations lie, has but two seasons each year,—one wet, the other dry. These seasons vary in time and duration, but in the regions under consideration, the dry season extends, roughly, from about the first of October until the end of June, occasionally the drought being broken during the early spring months. The months of July, August, and September are rainy, but the wet season is sometimes unusually prolonged, as in the case of the year 1925, when rains were still falling

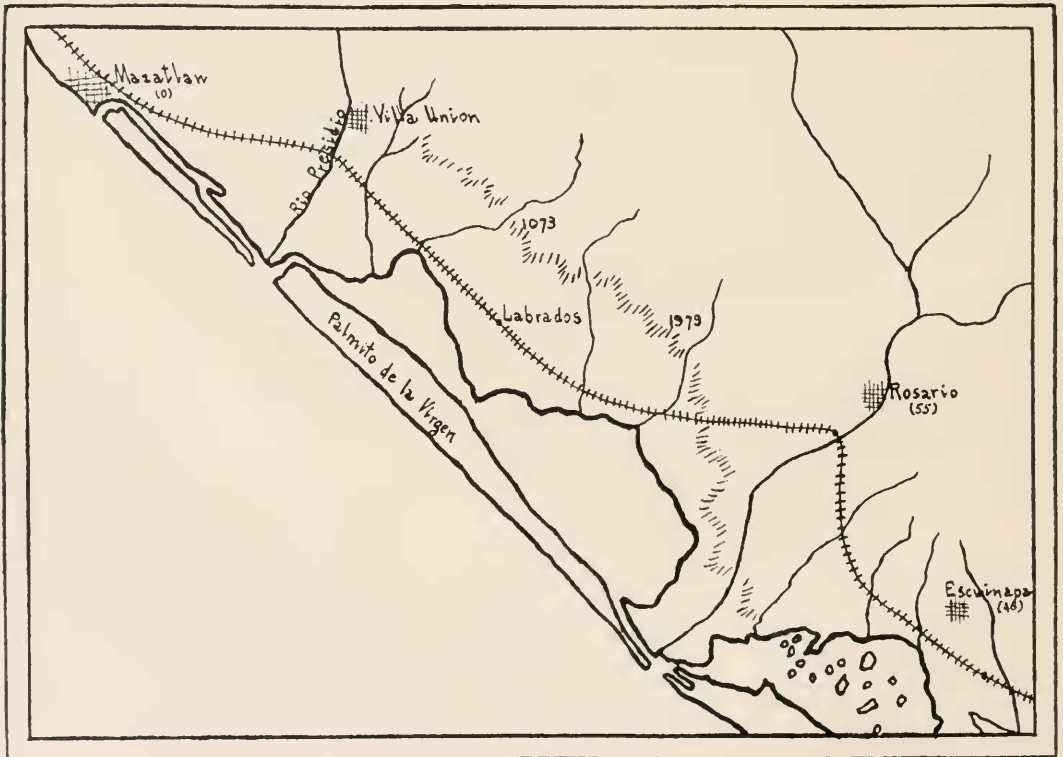


Fig. 1. The Labrados region.

on November 9. The heavy precipitation at this period fills arroyos, inundates woods, turns fields into impassible swamps, and transforms roads into freely flowing streams.

Labrados (or Labradas, both spellings being in vogue), some 25 miles southeast of Mazatlan, is in the Arid Tropical Region, for the rainfall, although heavy during the wet season, is but about 30 inches a year. Low temperatures prevail at night during the winter months, and killing frosts occur as far south as the Santiago River. These climatic conditions are reflected in the vegetation. There is a strongly xerophytic aspect about the flora of the region. The growth as a whole

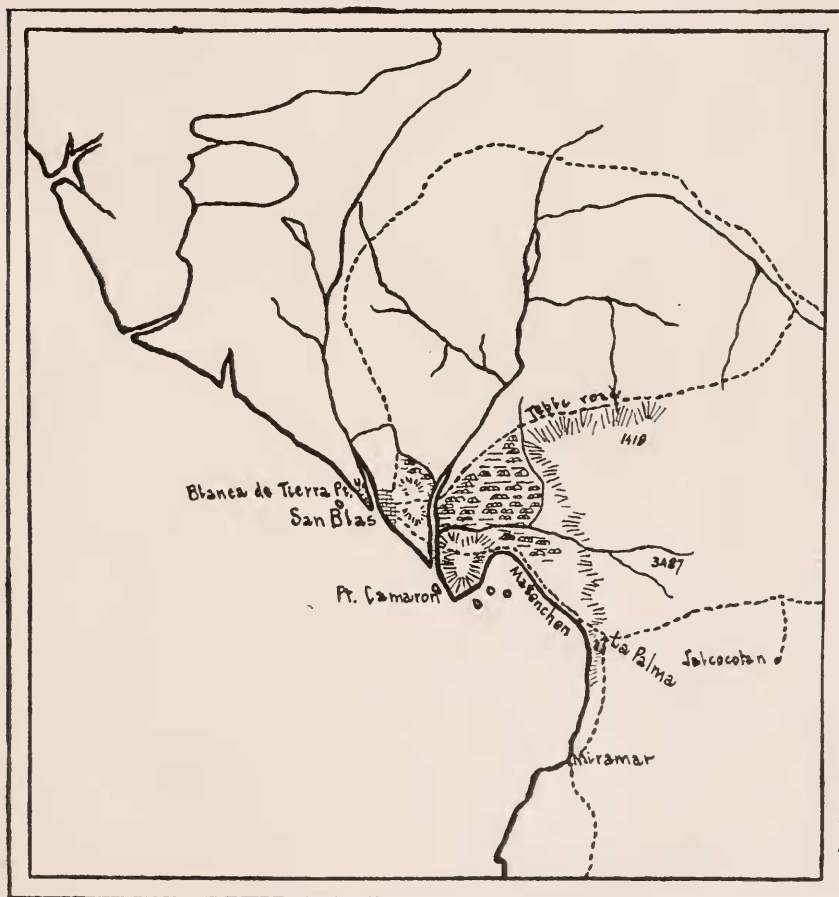


Fig. 2. San Blas and vicinity.

is low, and thorny shrubs, such as mimosas, acacias, etc., and cacti preponderate. As the name indicates, most of the land in the environs of the railway station of Labrados, is, or has been, under cultivation, and the thickets are interrupted by stretches of fallow land, overgrown by a tangle of weeds and vines, or, less commonly, by fields of corn.

The marches of the Humid Tropical Region include the area about San Blas. Although temperatures low enough to retard the ripening of bananas obtain in the winter months, San Blas is out of the zone of frosts, and an annual rainfall of nearly 60 inches induces a luxuriant growth of vegetation. A dense jungle clothes the hills to the east of the town, and Camaron and Blanca de Tierra points. Several palms are indigenous to the region. Pipers are in evidence in the low growth. Red-spathed bromeliads grow in the interstices of rocks and in the crotches of trees, waxy bignonias flourish in



Fig. 3. Maria Madre Island.

the deep shade, climbing aroids entwine tree trunks, and many unknown *bejucos* form a network in the low growth. Esteros, margined by mangrove swamps, line the face of the country in all directions, and leave but a small extent of grass- and weed-grown fields in the vicinity of the town.

Maria Madre Island, lying some 80 miles to the seaward of San Blas, is the largest of the Tres Marias group. It is about 15 miles long and eight wide, and the rocky ridge which forms the backbone of the island attains an elevation of 2020 feet in the central portion. The southern and eastern faces of the island are covered with what appears to be a second growth scrub, and the vegetation testifies to a prevailing aridity. The timber clothing the ridge and the western slope grows with greater luxuriance, and a wealth of ferns, orchids, and bignoniads gives evidence of moisture deposited by the winds from the Pacific.

As the northwestern coast of Mexico has been a field of operations for ornithological collectors since the days of the *Blossom*, it was not expected, aside from filling some blanks in the museum's series and adding specimens of northern birds in winter plumage, that the collections secured would be of great interest. The work of Xantus, Forrer, Grayson, Bischoff, Nelson, Goldman, Simons, Batty, and others, in some cases carried on over a period of several years, might have been expected to have cleared the slate of novelties and left but few facts of distribution to be revealed. It was, therefore, with considerable surprise that a specimen of a previously undescribed species of rail was taken at San Blas, and the distribution areas of a number of species were very considerably enlarged. The occurrence in this region of such northern migrants as Costa's Hummingbird, Grinnell's Water-Thrush, and the Common Tern occasioned no surprise, but the discovery of the Flammulated Flycatcher as a breeding bird of the Mazatlan area, and the presence there of the Yucatan Rough-winged Swallow aroused more interest. In several cases, also, the external and internal condition of a bird made it evident that the breeding season of the species was considerably more prolonged than had been previously supposed.

In the various places visited, every courtesy was extended by the Mexican officials. The work was particularly facili-

ated by the efforts of Señor Jesus Gonzales Ortega, of the Dirección de Estudios Biologicos, Mazatlan, Sinaloa; Señor J. Lopez Galindo, Secretario de la Colonia Penal, Maria Madre; Teniente Coronel Commandante del Resguardo Luis Garcia Guerrero, Maria Madre; and the Captain of the Port of San Blas, Nayarit.

In the course of the preparation of this paper, the writer visited museums in eastern United States for the purpose of studying comparative material. The courtesies extended by Dr. Alexander Wetmore, assistant secretary of the Smithsonian Institution; Dr. Charles W. Richmond, of the U. S. National Museum; Dr. Harry C. Oberholser, of the Biological Survey; Dr. Frank M. Chapman, of the American Museum of Natural History; and Dr. C. E. Hellmayr, of the Field Museum, greatly aided the work.

To Professor G. F. Ferris, of Stanford University, the writer is indebted for assistance rendered in the field.

The opportunity for collecting the material and preparing the report upon it has been afforded by Dr. Barton Warren Evermann, director of the Museum, California Academy of Sciences, and Mr. Joseph Mailliard, curator of the Department of Ornithology and Mammalogy.

LIST OF SPECIES

1. *Ortalis wagleri* (Gray). Wagler's Chachalaca

In the heavy growth about Labrados, Wagler's Chachalacas were not uncommon. The call note was often heard, but the bird itself was difficult to sight in the crowns of the trees. Frequently its presence was revealed by its heavy flight. This species was said by hunters to be common about San Blas, and one was kept as a pet by the family occupying the house adjoining the hotel, but none was seen in the wild state.

A female in the collection was taken near the estero at Labrados, September 21. It is in worn plumage, but feather renewal is in progress on both upper and under parts. The eighth and ninth primaries are not fully developed, and one pair of lateral rectrices is still in the sheath. The remaining feathers of the tail are still to be renewed.

2. *Lophortyx douglasii douglasii* (Douglas). Elegant Quail

A pair of these birds was noted occasionally in the roadway near Labrados, and covies were heard at intervals in the scrub bordering the pathways. A female, believed to be of this species, with a large brood of young (one of which was collected) was flushed from the branches of a wayside shrub near the estero. No birds of this species were observed at San Blas.

The female taken at Labrados, September 23, was in fresh plumage, only a few feathers of the under part being still in the sheath. The first contour feathers of the juvenile taken on September 28 are just beginning to appear. The outer two primaries are emerging from the sheath, while the head, abdomen, and tibia are still clad in down. The stage of plumage development of this example probably indicates that it is a member of a second brood. Batty¹ found the breeding season to be in April and May; and, at San Blas, Bailey² believed that a few of the birds had paired by May 17.

3. *Chloroenas flavirostris madrensis* (Nelson).

Tres Marias Pigeon

A few of these pigeons were noted in the tall timber bordering the trail to the salinas on Maria Madre. They flushed easily, and flew with a loud beating of wings which startled all the other birds in the vicinity. No specimens were secured.

4. *Melopelia asiatica mearnsi* Ridgway.

Western White-winged Dove

These doves were fairly common at all places visited, although fewer were seen at San Blas. The collection includes an unsexed example taken at Labrados, September 23; a female at San Blas, October 14; and a male and female on Maria Madre, October 23.

The unsexed bird from Labrados has acquired new rectrices, but the outer two primaries are little developed and pin feathers are present on all areas. The immature female from

¹ Miller, W. DeW., Bull. Am. Mus. Nat. Hist., Vol. XI, p. 342.

² Auk, Vol. XXIII, p. 385.

Maria Madre has the feather renewal only just commenced, the inner three primaries being newly developed. The other birds have nearly completed the postnuptial moult.

5. *Scardafella inca* (Lesson). Inca Dove

Inca Doves were seen occasionally about Labrados, where a male was taken on September 19. Postnuptial moult of the body plumage is nearly complete, but the outer four primaries and most of the rectrices are still to be renewed.

6. *Chæmepelia passerina pallescens* Baird.

Mexican Ground Dove

Mexican Ground Doves were numerous in the weed-grown areas in the environs of Mazatlan and San Blas, and were frequently seen dusting themselves in the roadways about Labrados and on Maria Madre. They were generally seen in pairs, and were said to be nesting still at Labrados on September 25. The female secured on Maria Madre, October 21, had a fully developed egg in the oviduct.

The three females in the collection were taken at Labrados, September 18; San Blas, October 14; and Maria Madre, October 21. The postnuptial moult of the example from Labrados is almost complete, although the outer two primaries are still in the sheath. The specimen secured at San Blas is an immature with the scapulars and inner secondaries much worn, but showing no indications of feather replacement. The one taken on Maria Madre is in unworn plumage.

7. *Chæmepelia rufipennis eluta* (Bangs).

Vinaceous Ground Dove

These ground doves were to be seen along the roadways and in the low growth of the partially cleared fields about San Blas. They occurred most frequently in the *campo* to the north of the town.

Two males were taken on October 3 and 6. One example is in fresh feather, save for the scapulars and a few inner secondaries. Moult has only just begun in the other specimen. Pin feathers are present on the under parts, and a few of the outer secondaries and inner primaries have been replaced.

8. *Leptotila fulviventris angelica* Bangs & Penard.

White-fronted Dove

Birds of this species did not appear to be common about San Blas, but a few were observed in the heavy growth flanking the Tepic road. One female, in fresh winter livery, was secured on October 19.

9. *Leptotila fulviventris capitalis* Nelson. Tres Marias Dove

These doves were fairly numerous on Maria Madre, the woods bordering the trail to the salinas seeming particularly attractive to the species. No examples were collected, however.

10. *Rallus nayaritensis* McLellan, new species. Nayarit Rail

The one clapper rail collected at San Blas seems, in spite of the bird's slight immaturity, to be possessed of characters warranting it receiving a new specific name.

Diagnosis: Breast uniform vinaceous cinnamon; white flank bars narrow (1 mm. or less in width); upper parts grayish olive, broadly streaked with fuscous black; greater and lesser wing-coverts superficially Saccardo's umber; wing about 130 mm.; tarsus and middle toe subequal, the length of the former contained about $2\frac{1}{2}$ times in that of wing.

Description: Forehead, crown, and occiput fuscous, slightly paler anteriorly, and posteriorly, like cervix, somewhat suffused with light grayish olive; interscapulars, scapulars, tertials, inner secondaries, rump, and upper tail-coverts fuscous black, more or less broadly margined with grayish olive; primaries, their coverts, and distal secondaries fuscous black; greater and lesser coverts superficially Saccardo's umber; rectrices fuscous black, obsoletely margined with grayish olive; supraloral stripe white, tinged with pale vinaceous cinnamon; lores, auriculars, and side of neck deep mouse gray, shaded on the ventral margins with pale vinaceous cinnamon; breast vinaceous cinnamon, becoming paler posteriorly, and passing into white on chin and throat; abdomen pale creamy white; sides, flanks, crissum, and central under tail-coverts

grayish brown narrowly barred with white, the bars being about 1 mm. in width, the interspaces from 4 to 7 mm.; lateral under tail-coverts white irregularly marked with fuscous black; tibia pale ochraceous buff on proximal surface and light grayish brown on the distal one; under wing-coverts deep neutral gray irregularly barred with white and pale vinaceous cinnamon.

Measurements: Wing, 129.0 mm.; tail, 54.6; tarsus, 50.0; tarsal diameter, 6.75; middle toe, without claw, 49.0; culmen, 59.6; depth of bill at base, 12.4; depth of bill at nostril, 7.3.

Type: No. 28184, Mus. Calif. Acad. Sci.; collected by M. E. McLellan at **San Blas, Nayarit, Mexico**, October 19, 1925.

The type specimen is an unsexed immature bird, in recently assumed winter dress. The contour plumage is unworn, and pin feathers are present on all the body feather tracts. All the flight feathers appear to have been newly developed, and the outer five primaries and the central rectrices are still in the sheath. It is believed, however, that the development of these feathers is almost at its maximum, as the calamus is horny and the pulp apparently withdrawn.

Geographically, *Rallus nayaritensis* is nearest to *Rallus yumanensis*, but the latter, in worn plumage, has much paler upper parts, broader white flank bars, and shorter culmen and toes. From *Rallus pallidus*, the San Blas bird differs in its darker upper parts, paler breast, and longer culmen. *Rallus levipes* is a more highly colored bird with proportionately shorter culmen, tarsus, and toes. The lack of rusty on the scapulars and interscapulars, the white supraloral stripe, narrow white flank bars, and proportionately shorter culmen, tarsus and toes distinguish the new species from *Rallus obsoletus*. *Rallus longirostris saturatus* displays broader mesial stripes and more olive margins on the interscapulars, broader white flank bars, and a breast somewhat suffused with olive, and has relatively shorter toes.

It is not improbable that an examination of a series of specimens from the San Blas region would prove *Rallus nayaritensis* to be but a subspecies of *Rallus longirostris*. Dr. Harry C. Oberholser, of the U. S. Biological Survey, who was kind

enough to examine the type, believed that it should be so regarded. Evidence at the disposal of the describer, however, does not seem to establish fully the fact of intergradation.

11. *Aramides axillaris* Lawrence. Venezuelan Mangrove Rail

Although the movements of a fair-sized bird were occasionally manifest in the swampy area bordering the Tepic road near San Blas, it was not until October 29 that one of the birds was finally sighted among some half-submerged branches. When the first specimen was being retrieved, it was discovered that the branches still sheltered several of these rails, and another specimen was secured. Although representatives of this species are scarce in collections, it is believed that the habits of the bird, and not its rarity, are responsible for this condition.

The plumage of the immature male and female collected is unworn on all areas, and appears to have been recently acquired.

12. *Fulica americana americana* Gmelin. Coot

About a dozen Coots were present on the waters of the salinas at the southern end of Maria Madre, and others were seen on the temporary pools near the corrals about a mile north of the settlement. This appears to be the first time that this species has been seen on the Tres Marias.

The two females obtained at the salinas on October 25 are birds in fresh winter plumage.

13. *Sterna hirundo* Linnæus. Common Tern

Common Terns do not appear to have been recorded previously from this region, but a female of this species was obtained from a flock present on the ocean shore at San Blas on October 2. The example is seemingly assuming its second winter plumage. The anterior portion of the crown and lores, and the forehead are white intermixed with black, and the remiges are unworn; the remainder of the plumage is that of the preceding summer.

14. *Hæmatopus palliatus frazari* Brewster.
Frazar's Oyster-catcher

The ocean shore from the town of San Blas southward to the ensenada of Matanchen was a resort for oyster-catchers. They were first noted October 2, and were seen at intervals throughout the month. They were more wary than most of the shore birds, and winged their way out to sea at the approach of an observer. No specimens were taken.

15. *Pagolla wilsonia beldingi* Ridgway. Belding's Plover

From among the swarms of shore birds frequenting the beach at San Blas, one male of this species was taken October 2. Others were noted at Labrados, and on the marisma at San Blas. The specimen in hand has newly acquired its flight feathers and most of the wing-coverts, and new and partially developed feathers are present on all areas of the body.

16. *Oxyechus vociferus vociferus* (Linnæus). Killdeer

Shore birds were numerous at the temporary pools situated about a mile north of the settlement on Maria Madre. Killdeer were noted among the assemblage October 26, and one female was collected.

17. *Himantopus mexicanus* (Müller). Black-necked Stilt

The tidal flats at Labrados, and the marisma at San Blas, swarmed with Black-necked Stilts. They were also seen at the salinas on Maria Madre October 25. Specimens were collected at San Blas October 19, but the skins were not preserved.

18. *Numenius americanus* subspecies

Birds believed to be of this species were occasionally seen at Labrados and San Blas, and one was also noted near the lighthouse on Maria Madre October 21. No specimens were secured.

19. **Catoptrophorus semipalmatus inornatus** (Brewster).
Western Willet

With the Black-necked Stilts, Western Willets were very abundant on the playa at Mazatlan and at the marisma at San Blas. The skin of the one specimen taken at San Blas, October 19, was not preserved.

20. **Totanus melanoleucus** (Gmelin). Greater Yellow-legs

A number of these birds were present at the estero at Labrados, and a male assuming winter garb was taken September 22. The flight feathers, save for the inner two secondaries, are new. Some worn feathers are still retained among the wing-coverts, and fresh feathers are only just appearing in the contour plumage.

21. **Totanus flavipes** (Gmelin). Yellow-legs

Yellow-legs were noted among the shore birds at Labrados and San Blas, and one female was taken at the marisma at San Blas October 19. The flight feathers of this example have been newly acquired. Moulting of the contour plumage has only just begun, pin feathers being present on all areas.

22. **Heteroscelus incanus** (Gmelin). Wandering Tattler

A few Wandering Tattlers were seen on the beach north of Mazatlan, between September 12 and 17, and others were present at San Blas. No specimen of this species was collected.

23. **Actitis macularia** (Linnæus). Spotted Sandpiper

During a few days spent at Mazatlan (September 12 to 17), and at San Blas, a few of these birds were observed. None was collected.

24. *Ereunetes mauri* Cabanis. Western Sandpiper

This sandpiper was present in large numbers at Labrados and San Blas. One specimen was taken at Labrados September 22. It is a bird in fresh winter plumage, only a few feathers on the head and throat not being fully developed.

25. *Pisobia maculata* (Vieillot). Pectoral Sandpiper

The temporary pools about a mile north of the settlement on Maria Madre attracted many shore birds, and from among them one Pectoral Sandpiper was taken October 26. Except for some worn interscapulars, it is a bird in fresh winter dress.

26. *Plegadis guarauna* (Linnæus). White-faced Glossy Ibis

A pool to the north of the wireless station on Maria Madre was found to be a resort for a number of these birds, and an immature female was taken there October 26. A few of these ibises were present on the marisma at San Blas October 29, but the only bird shot was not retained in the collection.

27. *Guara alba* (Linnæus). White Ibis

"Croak-croaks", as they are known to the natives, were very abundant in the vicinity of San Blas. Small flocks were to be seen in the mangroves bordering the esteros, and they were present in hundreds on the marisma flanking the Tepic road. At feeding time they whitened the tidal flats as far as one could see, and, if disturbed, flew off heavily to the nearest mangroves. Birds in adult and immature plumage were both included in the flocks, but young birds were decidedly in the minority.

The collection comprises three females and one male taken at San Blas, October 5, 6, and 7. An adult female is in worn dress, but a few new feathers are appearing on the forehead. Two immature females, probably acquiring the plumage of the second winter, have the moult of the flight feathers well advanced. One is developing an eighth and the other a ninth primary. The body plumage is being renewed, and, on one of the specimens, dark shaft lines persist on the newly acquired feathers of the head and neck. The wings of these three females all bear four dark-tipped primaries. The one male is

a hornotine in worn contour plumage. The remiges, save for the outermost, appear unworn, and a few new feathers are being developed on the head and neck.

28. *Ajaia ajaja* (Linnæus). Roseate Spoonbill

The first Roseate Spoonbill was noted at San Blas October 4, when one was seen feeding on a sandbar in the estero to the west of the town. A second bird was discerned flying over the marisma October 12. On October 17, a visit was paid to a laguna several miles north of the town, and, there, in a spot little disturbed by river traffic, scores of these birds were found in the mangroves, where they rested like gigantic pink blooms. They were very unsuspecting, and even after the first shot was fired, they flew only a short distance before alighting.

One immature and three adult males were collected October 17. A moult involving all feather tracts is in progress. The incoming feathers on the head and neck of the adult birds are pale rose pink, although the worn ones are pure white.

29. *Mycteria americana* Linnæus. Wood Ibis

But two Wood Ibises came under observation at San Blas. They were found in mangroves overhanging a small estero to the north of the town. Although they were said by the natives to be very difficult to approach, no trouble was experienced in obtaining one of the birds as a specimen. The example is an adult female acquiring winter plumage. Several of the rectrices are new, and the central ones are only partially developed. The outer primary is worn, the next two are still pulpy basally, and the proximal secondary is in the same condition. Apparently moult has not commenced in the contour plumage.

30. *Ardea herodias lessonii* Wagler.
Mexican Great Blue Heron

Several great blue herons had their hunting grounds on the margins of the Labrados estero, and many others were seen among the mangroves at San Blas. One immature female was taken at Labrados on September 28.



31. *Casmerodius albus egretta* (Gmelin). Egret

A few of these birds were noted at each visit paid to the estero at Labrados. At San Blas they were quite common, and many of the villagers kept them as pets. Although the plumes were offered for sale openly in Mazatlan, the Mexican government does not permit the birds to be collected for scientific purposes.

32. *Florida cærulea* (Linnæus). Little Blue Heron

Birds of this species were quite numerous about San Blas, where they were to be seen commonly on the banks of the esterios. They were also frequenters of the marisma and the flooded portion of the Tepic road. One bird had a definite stretch of road which it was seen to patrol daily during the hours when the water covered it. One adult female in fresh winter plumage was taken October 5.

33. *Hydranassa tricolor ruficollis* (Gosse). Louisiana Heron

Louisiana Herons were quite abundant at the estero near Labrados, and many of them were seen about San Blas. They were less wary than the other herons, and would feed undisturbed within a few feet of a passer-by.

Two immature males and an unsexed hornotine were collected at Labrados September 25 and 26, and an adult male at San Blas October 4. The unsexed bird is in its first contour feathers and there is no indication of moult. The immature males have fresh feathers appearing on the body feather tracts, and the adult male has the outer three primaries and a pair of rectrices still in the sheath.

34. *Nycticorax nycticorax nævius* (Boddaert).

Black-crowned Night Heron

It was only occasionally that night herons were seen among the mangroves at Labrados and San Blas. The one female secured at Labrados September 26 is undergoing a postnuptial moult.

35. *Butorides virescens virescens* (Linnæus). Green Heron

Just one Green Heron was seen at Labrados, but they were numerous at San Blas, where they were commonly to be seen climbing among the roots and branches of the mangroves.

The female taken at Labrados, September 25, is a bird in its first contour plumage, and filaments of down still adhere to some of the interscapulars and wing-coverts. The example taken at San Blas October 7 is an immature female acquiring its first winter plumage, undeveloped feathers being present on all the body feather tracts.

36. *Dendrocygna autumnalis* (Linnæus).

Black-bellied Tree-duck

Birds of this species were said to be numerous in the vicinity of San Blas, and they are occasionally kept in captivity by residents of the town. A downy young, less than a week from the shell, was presented to me by Señor Reynaud October 8. This example has the neossoptyles on all areas minutely tipped with black.

37. *Phalacrocorax vigua mexicanus* (Brandt).

Mexican Cormorant

A few Mexican Cormorants were generally to be found in the mangroves bordering the esteros at Labrados and San Blas. The skin of the female collected at San Blas October 3 was not preserved.

38. *Sula piscator* (Linnæus). Red-footed Booby

The estero at Labrados was apparently a favorite resort of Red-footed Boobies. The low growth at the margin of the water frequently harbored hundreds of these boobies, and at low tide their presence gave the semblance of snow drifts to the uncovered sand bars. They shunned human society and took flight at the slightest provocation. A flock of these birds on the wing—the snowy bodies and dark-tipped pinions silhouetted against the tropical sky—made a never-to-be-forgotten picture.

39. ***Sula nebouxii*** Milne-Edwards. Blue-footed Booby

Blue-footed Boobies were seen fishing at sea between San Blas and Maria Madre October 20 and 26. A dead bird was also picked up on the beach at San Blas October 2.

40. ***Sula brewsteri*** Goss. Brewster's Booby

None of these boobies was noted at sea, but the remains of a dead one was found at the salinas on Maria Madre October 25.

41. ***Fregata***, species

Man-o'-war-birds were generally soaring overhead, looking like great hieroglyphics outlined against the sky.

As no specimens were secured, it is impossible to say whether these birds belonged to the *magnificens* or *minor* group. Seven examples at hand from Clarion and San Benedicto islands, Revillagigedo Islands, are referable to *Fregata minor ridgwayi*, as defined by Lowe³. One male, however, obtained on San Benedicto on the same day and in the same breeding area as six other specimens, possesses a wing-bar, but has iridescent purple interscapular plumes. This bird is not fully adult, as the feathers of the breast have a grayish cast.

42. ***Pelecanus occidentalis californicus*** Ridgway.

California Brown Pelican

"Professor Birds", as they are known to the Mexicans, were always in evidence along the Mexican coast. They sailed about with a most dignified mien among the rollers near shore, and fished in the esteros. They roosted abundantly on Piedra Blanca, off San Blas, and in the trees on the islets in the ensenada of Matanchen. An immature female was taken near the north point of the ensenada on October 11.

³ Novitates Zoologicae, XXXI, pp. 279-313.

43. *Cathartes aura septentrionalis* Wied. Turkey Vulture

Among the numbers of Black Vultures present at San Blas, a single Turkey Vulture was noted on two occasions. They were more numerous on Maria Madre, the flocks on the beach in front of the settlement being largely of this species. No specimens were included in the collection.

44. *Coragyps urubu urubu* (Vieillot). Black Vulture

Black Vultures were common at all the points visited, although they were not numerous on Maria Madre. Nelson does not accord this species a place in his list of the birds of the Tres Marias Islands, but they were found in company with the Turkey Vultures on the playa in front of the settlement. The only specimens taken were two males secured at Matanchen, near San Blas, on October 11.

45. *Polyborus cheriway auduboni* Cassin.

Audubon's Caracara

Only one of these birds was noted on the tide lands at Labrados. Another was seen on the seaward side of Blanca de Tierra Point, and they were found occasionally on the ocean shore at San Blas.

A female was collected at Labrados on September 23. Feather replacement is in progress. Black feathers are interspersed among the worn brown ones of the crown, lower back, and wing coverts. The ninth and tenth primaries are not fully developed, and a pair of lateral tail feathers are in a similar condition. A couple of inner secondaries and the tertials are still to be replaced.

46. *Polyborus cheriway pallidus* Nelson.

Tres Marias Caracara

Caracaras were exceedingly abundant about the settlement and in the clearings near the shore on Maria Madre. They were seen singly and in flocks numbering from 12 to 20. The numerous tufts of feathers of small birds encountered seemed to indicate one source of food supply for the caracara.

The plumage of the immature male secured on October 21 was a good deal worn. New feathers, however, are developing on all areas of the body, and replacement of the secondaries has commenced.

47. *Asturina plagiata plagiata* (Lichtenstein).

Mexican Goshawk

Several of these hawks were in evidence about Labrados. One was observed in the vicinity of the estero, and frequently another was seen in flight over a weed-grown field near the station. An unsexed juvenile was collected near the railroad track September 19, and on the previous day an immature male was obtained in a clearing near the hacienda.

The young male is beginning to assume its cinereous plumage. Many fresh feathers of this color, some of them edged with cinnamon, are to be found among the scapulars and wing-coverts. The other bird is apparently younger. No moult is in progress, and no ashy feathers have made their appearance.

The proportionately long tail observed by Miller⁴ in the immature examples from Escuinapa, is found in the Labrados birds. The wing and tail measurements of the specimens at hand are: Wing, 282-257; tail, 197-184.

48. *Urubitinga anthracina anthracina* (Lichtenstein).

Mexican Black Hawk

Although not abundant at San Blas, several of these hawks were observed in the neighborhood and two females were taken October 9 and 15.

The immature bird, although exhibiting slight wear of plumage, shows no indications of feather renewal. The older bird is probably not fully adult, since a few of the scapulars and interscapulars are narrowly margined with rusty. A complete moult is in progress, and fresh feathers on the upper parts lack the rusty margins.

⁴ Bull. Am. Mus. Nat. Hist., XXI, p. 345.

49. *Falco ruficularis*, subspecies

A female white-throated bat falcon was collected from the branches of a dead tree at the edge of the marisma at San Blas, October 13. The lookout point had evidently been a satisfactory one, as the crop was filled with dragon-fly bodies.

This example appears to be an immature bird assuming winter garb. Newly developed feathers of the crown are slate-black or black; and those of the interscapular region are blackish slate with a black shaft line, and are obsolete barred with slate black. The throat and forebreast are white, only slightly tinged posteriorly with cinnamon buff. Fresh feathers appearing on the outer margin of this area are a decided cinnamon buff, but those of the central portion are paler. Unworn feathers of the breast are black, tipped and banded with pale cinnamon rufous. The measurements of this specimen are: Total length, 247.0 mm.; wing, 195.0; tail, 96.0; bill from cere, 12.5; tarsus, 34; middle toe without claw, 31.5.

The status of the bird from the northwestern coast of Mexico is somewhat doubtful. Neither the bird in hand nor the description given by Baird, Brewer, and Ridgway⁵ of the adult male from Mazatlan, agrees in color or measurements with the description of *Falco ruficularis petoensis*⁶ from Yucatan. Lack of comparative material makes the expression of an opinion regarding the systematic position of these birds inadvisable, but it is to be noted that Todd and Carriker⁷ recognize the Bolivian race only as distinct, while Bangs and Barbour⁸ are unable to detect any geographical variation in the species.

50. *Cerchneis sparveria*, subspecies

On two occasions during the week spent on Maria Madre, birds of this species were found in the vicinity of the wireless station. The pair seen October 26 were under observation for nearly an hour, but no specimen was taken.

⁵ North American Birds, Land Birds, III, pp. 130-131.

⁶ Chubb, Bull. B. O. C., XXXIX, p. 22.

⁷ Ann. Carnegie Mus., XIV, p. 160.

Bull. Mus. Compar. Zool., LXV, p. 194.

51. ***Pandion haliaëtus carolinensis*** Gmelin. American Osprey

Ospreys were common along the estero to the west of San Blas. Every commanding position at the turns of the river was occupied by one of these birds. They were very difficult to approach, however, and the adult male secured October 17 was the only one obtained.

52. ***Glaucidium brasilianum ridgwayi*** Sharpe.
Streaked-crowned Pygmy Owl

A bird thought to belong to this species was observed in a wayside tree in the hilly region to the east of San Blas. The momentary glimpse obtained was hardly sufficient for positive identification.

53. ***Ara militaris mexicana*** Ridgway. Mexican Green Macaw

Although birds of this species were said to breed in the vicinity of Labrados, none was seen during the time spent there. At San Blas, a noisy flock was occasionally seen flying high overhead. Others were heard in the dense jungle bordering the Tepic road, where the fruits of the coquito palm and wild fig proved a great attraction to these birds. Their exceeding wariness made close approach impossible, and no specimens were taken.

54. ***Eupsittula canicularis*** (Linnæus). Petz's Paroquet

Petz's Paroquets were quite abundant at Labrados, and large flocks were attracted to the vicinity of the hacienda by the fruit of a wild fig tree growing there. At San Blas, they were found indifferently in the swamps and in the hilly region eastward of the town. At dawn and at sunset their calls were to be heard high overhead as the birds made their way to and from favorite feeding grounds.

Fourteen specimens were collected. Two males and three females were taken at Labrados September 20, 25, and 26, and four males and five females were secured at San Blas October 12, 13, 14, and 16. A moult involving the contour and flight

feathers is in progress on a male taken at Labrados September 20. A female taken the same day is in almost entirely fresh feather, only a few pin feathers being present, and the distal primary and two lateral rectrices being undeveloped. The moult of the San Blas birds is further advanced. In most instances the renewal of plumage is almost complete. Three females, however, have been slower in acquiring new livery, and still have flight feathers not fully developed.

55. *Psittacula cyanopygia cyanopygia* Souancé.
Mexican Parrotlet

Parrotlets were discovered in but one spot near San Blas—the fields north of the town. Large flocks apparently frequented certain tall trees bordering the open ground. The presence of the birds was difficult to detect, and dead birds proved almost impossible to retrieve from the tall grass and weeds into which they fell.

A male and female were taken October 14. The male is a young bird which has just assumed its first winter plumage, a few pin feathers being present on the crown and throat. The contour plumage of the female is being renewed, two central rectrices are new, and three distal primaries and some inner secondaries have still to be replaced.

56. *Amazona oratrix tresmariae* Nelson. Tres Marias Parrot

These birds were fairly common on Maria Madre, and they were seen in pairs or in flocks on all parts of the island. The persecution to which they have been subjected at the hands of the residents has made these parrots very adroit in avoiding danger, and, although they proclaimed their presence by noisy cries, they took wing on the slightest hint of peril. A single adult female was taken October 24.

57. *Amazona finschi* (Sclater). Finsch's Parrot

Parrots of this genus were observed flying high above Labrados, and they were noted in greater numbers about San Blas. The only Finsch's Parrot in the collection, however,

was taken at the marisma near San Blas October 12. The bird is a male which is just experiencing a complete moult. The tenth and eighth primaries and several of the lateral rectrices are still to be replaced.

58. *Amazona albifrons albifrons* (Sparman).

White-fronted Parrot

Among the flocks of *Amazonæ* seen at Labrados, at least one of them was composed of birds of this species. Probably many others were present, but they were not always distinguishable from birds of the preceding species. This was also true at San Blas.

An adult male taken October 19, and a female secured October 17 are in the collection from San Blas. The female is in completely fresh livery, but a few pin feathers are present on the head and throat. The outer primaries of the male are just appearing from the sheath, and a few partially developed feathers are in evidence on other areas.

59. *Megaceryle torquata torquata* (Linnæus).

Ringed Kingfisher

Ringed Kingfishers were apparently rare at San Blas, and only two were noted on the western estero, where the one specimen—an adult female—was taken October 17. The plumage of this example is much worn on all areas, save for four proximal primaries, several distal secondaries, and one lateral rectrix which have been newly acquired. All the feathers of the upper parts are distinctly spotted with white, and the outer webs of the secondaries are conspicuously barred with white on the outer webs.

60. *Megaceryle alcyon caurina* (Grinnell).

Northwestern Belted Kingfisher

Only one bird of this species was noted at Labrados, but there were many on the esteros at San Blas, as well as about the flooded areas abutting on the Tepic road. On October 26,

one was seen on the wires attached to the pier on Maria Madre.

An adult and two immature females were collected at San Blas October 12, 13, and 17. The birds are all in worn plumage, but replacement has commenced among the remiges, and new feathers are appearing on the crown.

61. *Chloroceryle americana septentrionalis* (Sharpe).

Texas Kingfisher

This bird was common on all the waterways about San Blas, the Tepic road seeming to be a particularly profitable fishing ground for them. An immature male and female were secured on October 12, and an adult male on October 13.

The female exhibits no indications of moult and its plumage is in good condition. Both males are renewing the flight feathers, and the immature bird has many chestnut-rufous tipped feathers appearing on the breast.

62. *Momotus mexicanus mexicanus* Swainson.

Mexican Motmot

The only motmot seen about San Blas was discovered, October 16, in the deep jungle bordering the Tepic road. It proved to be an adult male with moult of the contour feathers in progress, but the flight feathers unaffected. The crop contained the remains of many beetles.

63. *Nyctidromus albicollis insularis* Nelson.

Tres Marias Parauque

Tres Marias Parauques seemed numerous on the island, and they were frequently flushed in dry arroyos and on shady paths. The collection comprises a male and three females taken October 23 and 24. In all cases the assumption of winter dress is nearly complete. The plumage of these specimens is decidedly darker than that of birds taken in May. The upper parts are strongly suffused with Rood's brown, and the anterior under parts are tinged with vinaceous-fawn.

64. ***Amazilia rutila rutila*** (Delattre).
Cinnamomeus Hummingbird

The Antigonon festooning the wayside shrubs about Labrados attracted numbers of these hummingbirds. At San Blas hummingbirds were fewer, and birds of this species were rarely seen save in trees supporting a growth of *Loranthus*.

The collection includes two males and two females taken at Labrados September 19, 22, and 27; and four males secured at San Blas October 3, 8, and 16. All the examples are experiencing feather replacement. A female taken at Labrados September 19 has almost completed its feather renewal. Another female secured on the same day retains a worn distal primary and two tertials, and has all the rectrices still in the sheath. Save for a few undeveloped feathers in the contour plumage, two males taken at San Blas October 3 and 8 have completed their moult. Another male collected October 16 has the outer two primaries still in the sheath and most of the rectrices only partially grown.

65. ***Amazilia graysoni*** Lawrence. Grayson's Hummingbird

The field notes of the California Academy of Sciences' party visiting Maria Madre in May, 1925, indicated that birds of this species were common on the island⁹. Few were seen in October, however, and they were on the western slope of the island and in the vicinity of the salinas. No specimens were secured.

66. ***Amazilia ellioti*** (Berlepsch). Black-billed Azure-crown

This hummingbird was not abundant at Labrados, but several were noted, and four males were collected on September 22, 24, 25, and 26. In the vicinity of San Blas one example only was seen. It was taken on October 16, but the skin was not retained in the collection.

Postnuptial moult is almost complete in the specimens at hand. In two cases the outer primaries are not fully de-

⁹ Proc. Calif. Acad. Sci., 4th Ser., XV, p. 303.

veloped, and a few pin feathers are present in the contour plumage of all the birds.

67. *Cyanthus latirostris* Swainson.

Broad-billed Hummingbird

Wherever the Antigonon blossomed about Labrados, Broad-billed Hummingbirds were to be found. They were less numerous at San Blas, where they frequented the clumps of *Loranthus* in company with the *Cinnamomeus* Hummingbird.

Seven males and one female were taken at Labrados on September 19, 21, 22, 25, and 27. Three of the males have almost completed the fall feather replacement. The remainder have a few undeveloped contour feathers, and outer primaries still in the sheath. The female has the central rectrices only partially developed.

68. *Cyanthus lawrencei* (Berlepsch).

Lawrence's Hummingbird

This species appeared to be the abundant hummingbird on Maria Madre. The Antigonon wreathing the scrubby growth on the eastern side of the island attracted them in numbers, and they also appeared in the gardens in the settlement. The adult male secured on October 22 is a bird in fresh winter plumage.

69. *Anthoscenus constantii leocadiæ* (Bourcier & Mulsant).

Pine Star-throat

Only three birds of this species were seen at Labrados. The specimen secured September 27 is a female in unworn plumage.

70. *Zephyritis costæ* (Bourcier). Costa's Hummingbird

One female Costa's Hummingbird was taken at Labrados September 27, but no other representative of the species was observed. The example is apparently an immature bird assum-

ing its first winter plumage. New feathers are appearing on the crown and back, and a few inner remiges are unworn.

This hummingbird does not appear to have been taken so far south since it was first recorded from the Mazatlan region by Ridgway¹⁰ in 1880.

71. *Trogonurus ambiguus ambiguus* (Gould).

Coppery-tailed Trogon

An unsexed hornotone of this species was taken in the deep woods near the Labrados estero on September 24. This was the only Coppery-tailed Trogon discovered in the vicinity, and none was noted at San Blas. The specimen secured appears to be a young male acquiring its first winter plumage.

72. *Trogonurus ambiguus goldmani* (Nelson).

Goldman's Trogon

In the heavy timber clothing the higher levels of Maria Madre, these trogons did not seem to be uncommon. So exceedingly quiet were they that their presence was usually detected by chance.

A juvenile male and an immature female were secured on the western slope of the island October 24. The male has newly developed metallic feathers on the crown and the remiges appear fresh, but the tail feathers are much worn. Save for abraded rectrices, the plumage of the female is in good condition. A few pin feathers are present on the body feather tracts.

73. *Trogon citreolus* Gould. Citreoline Trogon

Only one Citreoline Trogon was seen at Labrados, but at San Blas they were fairly abundant in the heavy timber. They were noted near the Tepic road, in the vicinity of Camaron Point, and between the ensenada of Matanchen and La Palma.

An adult male taken at Labrados September 18 has renewal of the contour feathers well advanced. The inner four second-

¹⁰ Proc. U. S. Nat. Mus., III, p. 314.

aries and outer four primaries are still to be replaced, and new rectrices are being developed. The immature male and female collected at San Blas October 13 and 29 seem to be undergoing a complete moult. Replacement of the contour feathers is nearly finished, and the male possesses new rectrices.

74. *Coccyzus minor palloris* Ridgway.

Pacific Mangrove Cuckoo

In the tangle of scrubby growth north of the wireless station on Maria Madre, a single Pacific Mangrove Cuckoo was obtained October 26. The bird is an immature female acquiring its first winter dress. The under parts are deep cinnamon-buff, new feathers being of the same color. The seventh primary appears to be new, as are some of the scapulars. One outer rectrix is about half-grown, and pin feathers are present on all areas of the body.

75. *Coccyzus americanus* (Linnæus). Yellow-billed Cuckoo

An occasional cuckoo was seen among the mangroves overhanging the western estero at San Blas, but only one bird was taken. It proved to be an immature male of this species. One central rectrix is new, but there is no other evidence of moult.

76. *Piaya mexicana* (Swainson). Mexican Squirrel-Cuckoo

Only three Squirrel-Cuckoos were seen about San Blas. They were all in the summits of tall trees, and their movements among the branches left no doubt as to the reason for the vernacular name.

The adult female collected October 15 has partially developed feathers present on all areas of the body feather tracts. Three new rectrices are in evidence. The tenth, eighth, and fifth primaries are just appearing, and the ninth and seventh seem new. Two distal secondaries are unworn.

77. *Morococcyx erythropygus mexicanus* Ridgway.

Mexican Rufous-rumped Cuckoo

The only Mexican Rufous-rumped Cuckoo noted was collected at Labrados September 28. It is a bird-of-the-year assuming its first winter plumage.

78. *Crotophaga sulcirostris sulcirostris* Swainson.

Groove-billed Ani

This was one of the most abundant birds in the region traversed, although their numbers were fewer about San Blas. Their raucous voices were nearly always to be heard throughout the day, and some of the calls seemed to be mimetic of those of other birds.

Three males and two females were collected at Labrados September 19, 21, and 23. One male and female are immature birds acquiring their first winter plumage. Replacement of the contour feathers has just commenced, the rectrices are worn, and the proximal primaries and distal secondaries are being renewed. Three younger birds are only just assuming their first contour plumage. The under parts are still clad in brownish black down, through which the definite feathers are here and there making their appearance. Flight feathers are only partially developed.

All the birds shot had the pupæ of some parasitic insect present subcutaneously.

79. *Centurus uropygialis uropygialis* Baird.

Gila Woodpecker

One Gila Woodpecker was obtained from the summit of a *Pachyceræus* at Labrados, September 25. The bird is an adult male in fresh winter plumage. Two distal primaries are not fully grown, and the central rectrices are still in the sheath.

80. *Centurus chrysogenys chrysogenys* (Vigors).

Golden-cheeked Woodpecker

A number of Golden-cheeked Woodpeckers were seen in the Pachycerei about Labrados. At San Blas they were quite common, and their noisy calls resounded in the village gardens as well as in the jungle.

Two adult males and a female were secured at Labrados September 22 and 27; and six males and four females were obtained at San Blas October 3, 5, 8, 9, 10, 12, 14, and 19. Two females taken at San Blas, October 14 and 19, are in winter garb. One taken October 12 is in worn plumage, but renewal has commenced. Another example secured October 10 retains worn secondaries. The remainder of the San Blas specimens, as well as those from Labrados, have feather renewal well advanced, in most cases the outer two primaries and central rectrices are not fully developed.

81. *Dryobates scalaris graysoni* (Baird).

Grayson's Woodpecker

Grayson's Woodpeckers seemed generally distributed on Maria Madre. They were observed among the second growth scrub on the eastern side of the island, in the dense woods, and among the agaves on the western shore.

A male and two females were collected October 23 and 24. One female is acquiring fresh central rectrices, but the remiges are greatly abraded. Moulting is affecting the wing feathers of the two other specimens, but the contour plumage is that of the preceding season.

Two of the birds have the flanks streaked, the third has streaks on one side and spot-like markings on the other.

82. *Dryobates scalaris sinaloënsis* Ridgway.

Mazatlan Woodpecker

Two Mazatlan Woodpeckers were seen at Labrados, and one of them was collected September 27. The plumage of this bird is in good condition, and there is no evidence of moulting.

83. *Scapanus guatemalensis nelsoni* Ridgway.

Nelson's Ivory-billed Woodpecker

Several of these noisy birds made their presence known in the woods near the Labrados estero, and they were apparently numerous in the swampy areas about San Blas.

The collection includes a female taken at Labrados September 24, and a male secured at San Blas October 10. Both birds have feather replacement well advanced. The stripe extending from the upper side of the neck to the lower back is maize yellow in the female, and almost pure white in the male.

84. *Ceophlœus lineatus scapularis* (Vigors).

Vigors' Lineated Woodpecker

Birds of this species frequented the higher levels about San Blas, and occurred abundantly in the woods flanking the Tepic road. One female was secured October 29. The contour plumage is unworn, and only the three distal primaries and the tertials are still to be renewed. The rectrices are apparently not new.

85. *Xiphorhynchus flavigaster mentalis* (Lawrence).

Grayson's Woodhewer

A Grayson's Woodhewer was found in the heavy woods near the estero at Labrados, September 24. It was wounded, but escaped to the tangled undergrowth. Two others were seen near San Blas, but no specimen was secured.

86. *Campostoma imberbe* Sclater. Beardless Flycatcher

On September 25, the persistent chirping issuing from a small bush on the edge of a clearing near the Labrados estero called attention to the presence of a Beardless Flycatcher. When collected, the bird proved to be a juvenile which is just assuming winter dress. New feathers are appearing among the worn ones on the crown, and the outer two primaries are still in the sheath.

I am indebted to Dr. W. DeW. Miller, of the American Museum of Natural History, for determining the identity of the specimen.

87. *Pitangus sulphuratus derbianus* (Kaup).

Derby Flycatcher

A few of these flycatchers were noted at Labrados. They frequented the mesquite on the ocean shore at San Blas, and were abundant inland along the Tepic road. The noisy calls made this species one of the most conspicuous features of the bird life of the region.

Three immature males were collected at San Blas October 3, 7, and 13. The first contour plumage is being replaced by winter dress. The body feathers are being renewed, but apparently not those of the wings and tail.

88. *Pyrocephalus rubinus mexicanus* Sclater.

Vermilion Flycatcher

Vermilion Flycatchers were seen occasionally at Labrados, and more abundantly about San Blas. The fields to the north of the latter town, and the territory about the marisma were seemingly most attractive to these birds.

From Labrados there are five adult males in the collection, taken on September 26, 27, and 28. One adult and one immature female and two immature males were taken at San Blas October 6, 7, 12, and 13. The adult birds have just experienced a complete moult. The female has a rectrix not fully grown, and one male has the outer primary still in the sheath. One immature male is in fresh winter livery, the other immatures have outer primaries and inner secondaries to renew, and one has a central rectrix only partially developed.

89. *Empidonax traillii brewsteri* Oberholser.

Brewster's Flycatcher

The shrubby growth at the estero at Labrados proved to harbor a number of these flycatchers. In that vicinity, three

immature males were collected September 19, 26, and 27. The newly acquired plumage seems to result from a complete moult.

90. *Empidonax difficilis difficilis* Baird.

Western Flycatcher

Western Flycatchers occurred in the more sheltered areas of the San Blas region, where one immature and four adult males and an adult female were collected October 6, 7, 9, and 10. Two of the adult males have fresh flight feathers, and renewal of the contour plumage is nearly complete. The other adults still have distal primaries and proximal secondaries to replace. The immature bird exhibits no indication of moult.

91. *Myiochanes pertinax pertinax* (Cabanis & Heine).

Swainson's Flycatcher

An immature female, believed to belong under this head, was obtained near San Blas October 13.

92. *Myiochanes richardsonii richardsonii* (Swainson).

Western Wood Pewee

One Western Wood Pewee was secured at Labrados, September 25. The bird is an immature male in its first winter plumage, but the tertials and a few crown feathers are those of the preceding season.

93. *Myiarchus nuttingi inquietus* (Salvin & Godman).

Guerrero Flycatcher

A male of this species was taken in the fields north of San Blas October 7. Winter plumage has recently been acquired.

94. *Myiarchus magister magister* Ridgway.

Arizona Crested Flycatcher

Many of these flycatchers were found among the low growth on the eastern slope of Maria Madre. The male taken October 22 is experiencing postnuptial moult. The outer three primaries and inner two secondaries are still in the sheath, and a few pin feathers are present on the forehead.

95. *Myiarchus lawrenceii tresmariae* Nelson.

Tres Marias Flycatcher

The second growth scrub on the eastern face of Maria Madre harbored many of these small flycatchers. The juvenile male taken October 21 is acquiring fresh livery, new and partially developed feathers being in evidence on all the body feather tracts.

96. *Myiarchus lawrenceii olivascens* Ridgway.

Olivaceous Flycatcher

Olivaceous Flycatchers were present in the mesquite near the ocean shore at San Blas, and also in the vicinity of the marisma. A female collected October 9 has fresh contour feathers, and a few flight feathers not quite fully developed.

97. *Deltarhynchus flammulatus* (Lawrence).

Flammulated Flycatcher

An unsexed juvenile collected at Labrados September 28 proved to be a representative of this rare species. Only five specimens have been recorded previously, and the first contour plumage, worn by this example, has never been described. Above the bird is grayish olive, faintly tinged anteriorly with light greenish olive; feathers of the crown with distinct dark shaft lines, those of the interscapular region having obsolete mesal lines and margins producing a nebulous effect; rump feathers tipped with pale cinnamon buff; upper tail-coverts medially light grayish brown, broadly margined with tawny

olive; rectrices grayish brown, the outer webs margined with tawny olive, the inner ones with pale cinnamon; outermost rectrix pale grayish brown, the outer web and margin of inner one pale grayish buff; primaries, secondaries, tertials, and the wing-coverts chætura drab; the distal primary narrowly margined with pale grayish buffy, the next two more distinctly edged with cinnamon buff, the inner primaries and secondaries with outer margins clay color and inner ones pinkish buff, tertials margined with warm to light buff; primary coverts narrowly edged with clay color, the greater ones with cinnamon buff, and the lesser with grayish olive; chin and throat grayish white, feathers of all but the mental apex with dark median stripe; forebreast and breast light grayish olive, streaked anteriorly with whitish and posteriorly with primrose yellow, and passing into primrose yellow on the abdomen and under tail-coverts; margin of wing lining pale buffy yellow, interrupted by grayish brown.

In comparison with the specimens of adults in the collection of the U. S. Biological Survey, this juvenile is more distinctly greenish olive above, the medial lines of the crown feathers darker, the lesser wing-coverts more olive, and the streaking of the under parts more pronounced and decidedly gray. Although lacking the intensity of color of an adult female (No. 156020, U. S. Biol. Surv. coll.) from Las Palmas, Jalisco (March 31, 1897), the Labrados bird more nearly resembles it than it does the specimens from Guerrero and Chiapas, and it is possible that the color differences exhibited by the juvenile may be due to geographic as well as age variation.

98. *Tyrannus melancholicus occidentalis* Hartert & Goodson.
San Blas Kingbird

This kingbird was one of the commonest birds at Labrados and San Blas, and on Maria Madre. At San Blas they were found most frequently near the ocean shore, where they hawked for the myriads of insects abounding there.

The collection comprises an adult, an immature male and two immature females taken at Labrados September 18, 19,

and 20; three adult males taken at San Blas October 2, 7, and 8; and one immature female secured on Maria Madre October 21.

All the examples are experiencing feather renewal. Three immatures from Labrados, taken September 18 and 19, are in fresh feather, but some of the primary and lesser coverts have not been replaced. The moult of the immature from Maria Madre has only just begun, and the remaining birds have the plumage in various stages of replacement.

The fresh feathers of the under parts vary in color from light cadmium to apricot yellow.

99. *Tityra semifasciata griseiceps* Ridgway.

Gray-headed Tityra

On October 15 and 29 an adult female and male of this species were obtained from the summit of the same tall tree in the jungle near the Tepic road. No others were seen. The postnuptial moult of the female is nearly complete, though some of the remiges are not fully grown and a few undeveloped feathers are present on the body feather tracts. The feather replacement of the male is well under way, but is behind that of the female.

100. *Iridoprocne albilinea* (Lawrence). Mangrove Swallow

Mangrove Swallows frequented the vicinity of the larger esteros about San Blas, and even the outer beach was regarded as good foraging ground. There was no diminution in their numbers by October 30, and no indication of the migratory movement that might have been expected from the field note quoted by Miller¹¹, "Arrives [in Escuinapa] in April."

Four adult males were secured at San Blas October 3, 5, and 16. One of the birds taken October 16 is in fresh livery. The others have new contour plumage, but one taken October 3 has the outer two primaries and the inner two secondaries to renew. Two of the examples have indications of a pectoral band.

¹¹ Bull. Am. Mus. Nat. Hist., XXI, p. 366.

101. *Stelgidopteryx ridgwayi* Nelson.
Yucatan Rough-winged Swallow

102. *Stelgidopteryx serripennis salvini* Ridgway.
Salvin's Rough-winged Swallow

The collection comprises three rough-winged swallows from Labrados taken September 17, 18, and 25. One of the specimens corresponds to Nelson's description of *Stelgidopteryx ridgwayi*, the other two appear to be referable to Ridgway's *Stelgidopteryx serripennis salvini*. Examination of the series of *Stelgidopteryx* in the U. S. National Museum, the American Museum of Natural History, and the Field Museum made the difficulties of the rough-winged swallow problem evident. The collections included few specimens in fresh feather and none in plumage comparable to that of the birds under consideration. The evidence tended to prove the intergration of *ridgwayi* with *salvini* and *serripennis*¹², but the occurrence of a typical *ridgwayi* in the Mazatlan region, as well as more or less characteristic examples in Jalisco (May 9), and in central Mexico, suggests that the variations may not be wholly geographical in origin.

103. *Poliioptila cærulea amoenissima* Grinnell.
Western Gnatcatcher

Gnatcatchers were quite numerous in the shrubbery bordering the roads and fields about San Blas. One particular mimosa tree to the south of the town was generally found to have several in its branches. Three female Western Gnatcatchers were taken on October 3 and 14. The bird collected on the 14th is in unworn plumage, only the central pair of rectrices is yet to be renewed. The body plumage of the other examples is fresh, but the flight feathers have not been replaced.

¹² Bangs, Biol. Soc. Wash., XIX, p. 110.

104. *Polioptila nigriceps nigriceps* Baird.

Baird's Gnatcatcher

The trees bordering forest glades near Labrados were found to harbor quite a number of gnatcatchers. An immature female and an adult male secured September 17 and 26 proved to belong to this species. The postnuptial moult of the male is well advanced, but that of the female has hardly begun.

105. *Thryophilus sinaloa sinaloa* Baird. Sinaloa Wren

At Labrados wrens were occasionally heard, but rarely seen. Although they were more in evidence about San Blas, specimens proved difficult to secure. The collection includes an immature male obtained at Labrados, September 22, and a juvenile and an adult male taken at San Blas, October 6 and 3. The juvenile is in its first contour plumage, and the flight feathers are only partially developed. The auriculars and throat of this specimen are tinged with pale yellow. The plumage of the adult is greatly abraded, but there is no indication of moult.

106. *Pheugopedius felix pallidus* (Nelson). Durango Wren

An immature female of this species was obtained at San Blas, October 14. The breast and sides are strongly tinged with ochraceous-tawny, passing into pale cinnamon brown on the immaculate under tail-coverts.

107. *Pheugopedius felix lawrencii* (Ridgway).

Lawrence's Wren

Lawrence's Wrens proved to be abundant and very tame on Maria Madre. So confiding were they that they would approach within a few feet of a spectator, and examine him without the slightest trace of fear. The plumage of a male collected October 22 is greatly abraded. Several of the remiges are worn almost to the rachis, and all but one rectrix has been shed. The contour plumage has been largely replaced, and some of the inner primaries are new. The newly developed feathers of the pilius are antique brown.

108. *Mimus polyglottos leucopterus* (Vigors).

Western Mockingbird

Two mockingbirds in full song were discovered in a field near San Blas. No others were seen in the vicinity, but several were found on Maria Madre. The female taken at San Blas October 14 is experiencing postnuptial moult. Renewal of the contour plumage is almost complete, but the distal primaries and inner secondaries have still to be replaced.

109. *Toxostoma curvirostre occidentale* (Ridgway).

Mazatlan Thrasher

The Mazatlan Thrasher collected at Labrados, September 22, was the only representative of the species observed. Postnuptial feather replacement is nearly complete. A few worn scapulars and interscapulars are present, and the distal primary and three proximal secondaries are those of the preceding season. Some of the rectrices are not fully developed.

110. *Melanotis cærulescens longirostris* (Nelson).

Tres Marias Blue Mockingbird

Blue mockingbirds did not appear to be so numerous or so fearless as Nelson¹³ found them in 1897. A good many were seen, however, in the less frequented portions of the thicket. They were very quiet in their movements, and no song was heard. The moult of the immature taken October 23 is well advanced.

111. *Turdus rufopalliatus* Lafresnaye. Mazatlan Robin

At Labrados few robins were seen, but at San Blas they were more in evidence. A good many occupied the thicket north of Blanca de Tierra Point, and others were present in the lower growth flanking the Tepic road. A juvenile male taken at Labrados September 18 is assuming winter dress, but there are still many spotted feathers on the throat and breast.

¹³ N. A. Fauna, No. 14, p. 59.

Two adult females secured at San Blas, October 10 and 15, have the feather renewal nearly complete, although pin feathers are present in the contour plumage.

112. ***Turdus graysoni*** (Ridgway). Tres Marias Robin

Robins were abundant and widely distributed on Maria Madre. Although they seemed to prefer the more open areas on the eastern slope, a few were noted in the heavy timber. Two adult males collected October 22 and 23 are in fresh feather. In this plumage the feathers of the back are dresden brown, the scapulars margined with ochraceous-tawny, and the forehead and crown washed with a pale tint of dresden brown. The sides and flanks are pale buckthorn brown, and the under wing-coverts pale ochraceous-orange.

113 ***Hylocichla ustulata ustulata*** (Nuttall).

Russet-backed Thrush

One Russet-backed Thrush was obtained at San Blas, October 3. It is a bird in its first winter plumage, and still retains buff-tipped wing-coverts.

114. ***Lanivireo solitarius plumbeus*** (Coues).

Plumbeous Vireo

Vireos were very rare at all the collecting stations, and the capture of an adult male Plumbeous Vireo at Labrados September 28 was quite unexpected.

115. ***Mniotilta varia*** (Linnæus). Black-and-White Warbler

A few birds of this species were noted in the woods flanking the Tepic road, San Blas, and one immature male was collected October 29.

116. *Compothlypis pitiayumi insularis* (Lawrence).

Tres Marias Warbler

Tres Marias Warblers were met with upon but one occasion on the mainland—in the low growth near the Labrados estero. Upon Maria Madre they were numerous, sharing with the wrens the distinction of being the most abundant species on the island. They seemed to be in full song, and gave voice to a faint but melodious lay.

The collection includes an immature male from Labrados, taken September 24, and an immature and two adult males taken on Maria Madre October 23, 21 and 22. The first winter's plumage of the Labrados bird has been assumed, and the moult of the birds from Maria Madre is complete.

117. *Dendroica æstiva sonora* Brewster.

Sonoran Yellow Warbler

A male Sonoran Yellow Warbler was captured at Labrados, September 24. A few other examples were noted in that neighborhood, but none was positively identified at San Blas. The specimen in hand is in full winter plumage.

118. *Dendroica erithachorides castaneiceps* Ridgway.

Mangrove Warbler

Only one bird of this species was recognized in the mangroves near the Labrados estero, but at San Blas the growth fringing the marisma sheltered a great number of them.

One immature and six adult males, two females, and one unsexed example were obtained at San Blas, October 9, 12, and 16. Two adult males have outer primaries and inner secondaries still in the sheath, and another has many undeveloped feathers in the contour plumage. The unsexed bird appears to have fresh primaries and secondaries, but the tertials and rectrices have not been renewed. An immature female is in worn livery, but indications of replacement are in evidence in the body plumage. The remainder of the specimens have acquired winter dress.

119. *Dendroica nigrescens* (Townsend).

Black-throated Gray Warbler

An occasional warbler, believed to belong to this species, was noted in the tall timber bordering the Tepic road, and a female and an unsexed bird were obtained October 9 and 16. Both birds are in postnuptial garb.

120. *Dendroica auduboni*, subspecies

Two birds of this species were seen at close range at sea between San Blas and Maria Madre, October 20.

121. *Oporornis tolmiei* (Townsend).

Macgillivray's Warbler

This warbler was not uncommon in wayside brush and second growth scrub on the mainland. An immature bird was taken at Labrados, September 27; and an immature male, a female, and an unsexed bird were secured at San Blas, October 2, 10, and 14. The immature male has many pin feathers present on the forehead and throat, but the moult of the other examples is complete.

122. *Seiurus noveboracensis notabilis* Ridgway.

Grinnell's Water Thrush

A male, in postnuptial dress, was taken near the Tepic road, San Blas, October 15. This species does not appear to have been previously reported from this portion of Mexico.

123. *Geothlypis trichas modesta* Nelson.

San Blas Yellow-throat

No yellow-throats were seen at Labrados, but about San Blas they were quite common. The marisma proved to be the headquarters of the species, but some individuals were noted on the peninsula opposite the town.

An adult male and four females were taken October 12. One female seems to wear winter dress, but moult is still in progress in the other examples.

124. *Icteria virens longicauda* Lawrence.

Long-tailed Chat

In the vicinity of San Blas a number of Long-tailed Chats were seen. They frequented the bushes in the fields to the north of the town, and several were noted in the deep woods bordering the Tepic road. Two females were taken October 7. No moult is in progress, but the rectrices are unworn, and the outer primaries and the tertials appear to have been renewed.

125. *Granatellus francescæ* Baird.

Tres Marias Red-breasted Chat

During the five days spent on Maria Madre only two birds of this species were seen. One was discovered in the deep woods on the western side of the island, and another, which was collected, in the lighter growth by the trail to the salinas. The specimen is an immature male in fresh winter plumage.

126. *Wilsonia pusilla chryseola* Ridgway.

Golden Pileolated Warbler

Pileolated warblers were present in considerable numbers at both Labrados and San Blas. An adult and two immature males collected at San Blas, October 8, 22, and 28, have been referred to this form.

127. *Setophaga ruticilla* (Linnæus). American Redstart

No redstarts were observed at Labrados, but a number of individuals were seen pirouetting and posturing in the quieter woods near San Blas. An adult male and female were collected October 9 and 16.

128. *Euthlypis lachrymosa tephra* Ridgway.

Western Fan-tailed Warbler

The collection includes two Western Fan-tailed Warblers, which were taken October 15 and 16 in the same spot near the Tepic road, San Blas. They were seeking food about a fallen

log, and gyrated about much as do the redstarts. A sharp *chirp* was uttered at intervals as the birds went through their performance.

129. *Pheucticus chrysopheplus* (Vigors).

Vigors' Grosbeak

Certain trees in the vicinity of Labrados were resorted to by many Vigor's Grosbeaks. Occasionally one was heard uttering a rather pleasing call note, but no true song was produced.

The three immature males secured September 23, 24, and 25 are assuming winter garb. One example has feather replacement nearly complete; the others still retain much of the juvenile plumage.

130. *Cyanocompsa parallina indigotica* (Ridgway).

Turquoise-fronted Bunting

Wayside weeds and shrubs afforded food and cover for numbers of seed-eating birds. From among flocks of these birds two immature males and one immature female of the Turquoise-fronted Bunting were captured September 24, 26, and 27. The autumn moult of one of the males is well advanced. The body plumage appears to be unworn, and new flight feathers are being developed. The other examples seem to belong to a late brood. Replacement of the juvenile plumage has only well begun.

131. *Sporophila torqueola* (Bonaparte).

Cinnamon-rumped Seedeater

Weedy fields to the north and south of San Blas were favorite resorts of these seedeaters. Two adult males and three immature females were secured October 2, 5, 6, and 7. Although the plumage of the males is greatly abraded, a new lateral rectrix being developed by one of them is the only indication of feather replacement. Two of the females are in winter garb, but the third, a much younger bird, has just commenced the moult of the contour feathers.

132. *Volatinia jacarini atronitens* Todd.

Blue-black Grassquit

Blue-black Grassquits frequented the corn fields and weed patches about Labrados, but they were so wild that specimens were difficult to secure. One male, too greatly damaged to preserve, was taken September 18, and another male and a female in the collection were secured September 26 and 27. The male is in fresh body plumage, but, save for the tertials and greater and lesser coverts, the flight feathers are much worn. The female is a bird in its first contour plumage.

133. *Richmondena cardinalis mariæ* (Nelson).

Tres Marias Cardinal

On Maria Madre, cardinals were exceedingly abundant. They were present in the scrub near shore and in the clearings on the central ridge. An adult male and female were secured October 22. The male is in almost fresh feather. Two proximal secondaries have yet to be shed, and other flight feathers are not fully developed. The female has only just commenced the renewal of the remiges, and the worn rectrices are retained.

134. *Saltator plumbiceps* Lawrence. Grayson's Saltator

During the collecting period at San Blas, only two of these birds were seen. An adult male was discovered in scrub growth in a field north of the town, and an immature female was shot in the heavy growth near the Tepic road. The female taken October 19 is in fresh plumage. The winter dress of the male is being acquired. The contour feathers and rectrices are new, but inner secondaries and the outer primary have not yet been replaced.

135. *Spiza americana* (Gmelin). Dickcissal

Birds, believed to be Dickcissals, were present in the corn fields about Labrados, but no specimens were taken. At San Blas one of a pair was collected on the Tepic road, October 15; and another example was secured in the mangroves bor-

dering the marisma, October 29. The male still possesses worn tertials and rectrices, but the remainder of the plumage is fresh. The livery of the female appears to be unworn.

136. *Chondestes grammacus strigatus* (Swainson).

Western Lark Sparrow

An adult male and an immature female of this species were taken near the railroad station at Labrados, September 21 and 27. The male is in fresh postnuptial plumage, but the female is in worn feather. A few new feathers showing on the forehead are the only indications of renewal.

137. *Passerina ciris* (Linnæus). Painted Bunting

Many Painted Buntings foraged among the wayside weeds, and darted in and out of the bushes at the margins of clearings. Two adult males and two females were secured at Labrados, September 25 and 26, and an adult and an immature male were taken at San Blas, October 16 and 19. An adult male taken on September 26 has the outer primary still in the sheath and many pin feathers present among the contour feathers. The immature male is in fresh body plumage, but inner primaries, outer secondaries, and some of the lateral rectrices have yet to be moulted. A female taken on September 26 has the flight feathers still in the sheath. The other examples have acquired postnuptial dress.

138. *Arremonops superciliosus sinaloæ* Nelson.

Mazatlan Sparrow

The sweetest songster of the Labrados woods was so shy that he was exceedingly difficult to sight, although the notes frequently announced his presence. When specimens were eventually obtained September 26, they proved to be representatives of this rare form. So far as published records show, only six examples have been taken previously.

The female in hand is in greatly abraded plumage, and moult has barely begun. The male is an immature which is beginning to acquire adult dress.

139. *Euphonia godmani* Brewster. Godman's Euphonia

A chance shot into the crown of a forest giant growing near Point Camaron, San Blas, brought to the ground the one euphonia collected. No other birds of the species were seen.

140. *Piranga bidentata flammea* Ridgway.

Tres Marias Tanager

Members of the *Ortolan* party, which visited the Tres Marias Islands in the spring of 1925, reported¹⁴ that tanagers were abundant on Maria Madre, but only one was seen in October. It was an adult male in greatly abraded plumage. Moulting of the flight feathers has commenced, and many new feathers are present in the contour plumage.

141. *Cassiculus melanicterus* (Bonaparte).

Mexican Cacique

This species was common about Labrados and San Blas. The noisy calls and brilliant plumage made it an especially striking feature in the avifauna of the region. At Labrados, Mexican Caciques were frequently found in company with Collie's Jays, with which they form a commensal union.

Two males taken at Labrados September 23 and 24 are young birds acquiring winter plumage. A female collected at San Blas, October 10, is in similar garb. Two adult males taken at San Blas, October 3 and 12, have almost completed their feather renewal, although outer primaries and some of the rectrices are still in the sheath.

142. *Tangavivus æneus æneus* (Wagler). Bronzed Cowbird

In waste areas in the vicinity of Mazatlan and Labrados, cowbirds were quite common. The collection includes three immature males, an adult and an immature female, and an immature unsexed bird taken at Labrados, September 20. The adult female is in greatly worn plumage, but moulting is evident in the plumage of all the examples.

¹⁴Proc. Calif. Acad. Sci., 4th Ser., Vol. XV, No. 11, p. 310.

143. *Icterus spurius* (Linnæus). Orchard Oriole

The chestnut and black plumage of adult males of this species was often in evidence in the wayside shrubbery about San Blas. No bird in this livery was noted at Labrados, but an immature male was collected there September 21. Two males taken at San Blas, October 2 and 8, are in fresh feather, but a third secured October 2 still has the outer three primaries, inner secondaries, many wing-coverts, and the rectrices in the sheath. A female taken on the same day is in a similar stage of feather development. The Labrados bird is experiencing a complete moult.

144. *Icterus pustulatus* (Wagler).
Scarlet-headed Oriole

The harsh scolding note of the Scarlet-headed Oriole was frequently heard in the bush near the mainland collecting stations. At Labrados they seemed to associate themselves with the caciques. Four examples were taken at Labrados, September 22 and 23; and two more were obtained at San Blas, October 2 and 19. One immature female from Labrados shows only the first indications of moult. An adult male and an immature male and female have moult well advanced, but in the immature birds replacement of the rectrices has not yet commenced. The San Blas birds have assumed winter dress.

145. *Icterus graysonii* Cassin. Grayson's Oriole

This bird was common on Maria Madre, where its scolding note called attention to its presence in the scrub growth on the eastern slope of the island. The immature male secured October 22 is undergoing moult, but the rectrices are not affected.

146. *Megaquiscalus major obscurus* (Nelson).
Colima Boat-tail

About the town of San Blas were numbers of ragged, tailless boat-tails, every stage of disreputable plumage being in evidence. The birds were in the patios and on the roof ridges, and appeared in the weedy wastes on the outskirts of town.

An immature and two adult males and an adult female were collected, October 5 and 10. A complete moult is in progress. A few faded feathers are in evidence and most of the fresh flight feathers are not fully developed.

147. **Megaquiscalus major graysoni** (Sclater).

Grayson's Boat-tail

The waste area to the north of Mazatlan and the fields about Labrados generally held representatives of this form. An unsexed bird (adult male) and an immature male were obtained at Labrados, September 20 and 25. The moult of the adult bird is well begun, but none of the rectrices has been replaced. The immature bird has new feathers present on the forehead and breast, scapulars and interscapulars.

148. **Corvus mexicanus mexicanus** Gmelin¹⁵. Mexican Crow

Flocks of crows frequented the coconut grove to the east of the town of San Blas, and others were to be found about the mill site north of Blanca de Tierra Point. Two males and a female were collected October 5, 8, and 9. All examples are in fresh feather, the outer primaries in each case not being fully developed.

149. **Calocitta colliei** (Vigors). Collie's Magpie-Jay

This striking bird was frequently in evidence about Labrados in the company of the caciques. It was not present at San Blas, but on November 1, flocks were observed in the oak groves near Jalcocotan, Nayarit. An adult male and an adult and immature female were collected at Labrados, September 19 and 23. A complete moult is being experienced by the adult birds. The young bird is in its first contour plumage,

¹⁵ Meinertzhagen, *Novitates Zoologicae*, XXXIII, p. 87.

and, except for a new central rectrix, there is no indication of feather renewal.

150. *Cissilopha sanblasiana nelsoni* Bangs & Penard.

San Blas Jay

Only a few of these jays were seen about San Blas, and they occupied the higher ground in the vicinity of the Tepic road. On October 15 and 16, two males and an unsexed bird were secured. The fall renewal of plumage is nearly complete in all specimens, only outer primaries and lateral rectrices not being fully developed.

151. *Cissilopha beecheii* (Vigors). Beechey's Jay

Beechey's Jays formed a very striking part of the landscape in the vicinage of Labrados. Their sociable habits and noisy calls render them very conspicuous as the flocks move from tree to tree, foraging as they go. An adult male and an adult and an immature female were obtained at Labrados, September 18, 22, and 23. The feather replacement of the adult birds is nearly complete, although some of the flight feathers are not fully developed. Renewal of the contour feathers of the immature female is in progress, but the flight feathers do not appear to be affected.